AMENDMENTS TO THE CLAIMS

1. (Previously presented) A method for conveying data in a connection between terminals in a communications network comprising at least one low-bit-rate artery and at least one standard-bit-rate artery, the method comprising:

at a first end of the low-bit-rate artery,

receiving a plurality of first basic transmission units from different originating terminals, each first basic transmission unit comprising a packet of application data formed according to a second protocol, wherein the packet of application data comprises a plurality of coded frames and a header, each of the plurality of coded frames comprising data received from the different originating terminals according to a first protocol and converted by a compression algorithm;

extracting one or more packets of application data from the plurality of first basic transmission units;

multiplexing the one or more packets of application data received from the different originating terminals by inserting into a second basic transmission unit for transmission via the low-bit-rate artery to a second end of the low-bit-rate artery;

setting an adjustable time lag for transmission of the second basic transmission unit when a first of the one or more packets of application data is inserted into the second basic transmission unit; and

at an end of the adjustable time lag, transmitting the second basic transmission unit from the first end to the second end of the low-bit-rate artery;

at the second end of the low-bit-rate artery,

extracting the one or more packets of application data from the second basic transmission unit;

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inserting the extracted one or more packets of application data into a third basic transmission unit; and

transmitting the third basic transmission unit to a terminating terminal.

2.   (Previously presented) The method according to claim 1, further comprising:

forming a Common Part Sublayer packet comprising a packet of application data;

multiplexing the Common Part Sublayer packet into the second basic transmission unit before transmission at the first end of the low-bit-rate artery; and

demultiplexing the Common Part Sublayer packet at the second end of the low-bit-rate artery.

3.   (Canceled)

4.   (Previously presented) The method according to claim 2, wherein an AAL2 protocol is used when multiplexing the Common Part Sublayer packet into the second basic transmission unit.

5.   (Previously presented) The method according to claim 1, wherein each of the one or more packets of application data includes a fixed number of successive coded frames.

6.   (Previously presented) The method according to claim 1, wherein the data received from the different originating terminals is transported from the originating terminals according to an AAL1 protocol.

7.   (Previously presented) The method according to claim 1, further comprising, when the second end of the low-bit-rate artery corresponds to a first end of an additional low-bit-rate artery, repeating the multiplexing of the one or more packets of application data received from the different originating terminals into a second basic transmission unit for transmission from the first end to a second end of the additional low-bit-rate artery.

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8.   (Canceled)

9.   (Previously presented) The method according to claim 1, further comprising using a header of each packet of application data to check the integrity of the data sent between an originating terminal and the terminating terminal in the communications network.

10.   (Previously presented) The method according to claim 1, wherein the data comprises video or digital voice data.

11.   (Currently amended) An apparatus for data transmission between an originating terminal and a terminating terminal in a communications network comprising at least one low-bit-rate artery and at least one standard-bit-rate artery, comprising:

a multiplexer device in communication with the at least one low-bit-rate artery and at least one standard-bit-rate artery, wherein the multiplexer device is configured to switch packets of compressed data transmitted in basic transmission units according to an adaptation layer protocol among several virtual lines constituted by connections in multiplexed or non-multiplexed mode, wherein data from the originating terminal transmitted on the at least one standard-bit-rate artery is multiplexed with data from another originating terminal onto the at least one low-bit-rate artery, the data being transmitted over the at least one low-bit-rate artery at an end of an adjustable time lag, the time lag being set when a first packet is inserted in a basic transmission unit; and

an adaptation unit associated with the terminating terminal, wherein the adaptation unit is configured to:

extract the packets from the basic transmission units;

extract the data from the packets;

determine a mode of operation of a connection between an originating terminal and a terminating terminal using signaling data inserted in the packets and indicating the mode of

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operation, the mode of operation comprising at least one of voice, fax, or a compression algorithm used to compress the data; and

decompress the data in order to recreate the data from the originating terminal.

12.   (Previously presented) The apparatus according to claim 11, further comprising:

a shuffler configured to transmit first basic transmission units to the multiplexer device for transmission through the at least one low-bit-rate artery and further configured to transparently switch basic transmission units that are not to be transmitted through the at least one low-bit-rate artery, wherein the multiplexer device is further configured to extract the packets from the first basic transmission units and to insert the packets into second basic transmission units for transmission through the at least one low-bit-rate artery, and

a table configured to determine the at least one low-bit-rate artery over which the packets in the second basic transmission units are to be transmitted.

13.   (Previously presented) The apparatus according to claim 11, wherein the adaptation layer protocol is an AAL2 protocol.

14.   (Previously presented) The apparatus according to claim 13, wherein the apparatus is an ATM switch that includes the multiplexer device, and wherein the multiplexer device is configured to switch Common Part Sublayer packets among the several virtual lines constituted by the connections in multiplexed or non-multiplexed mode, the connections comprising ATM connections in multiplexed or non-multiplexed AAL2 mode.

15.   (Currently amended) A network configured to convey data between at least two terminals, comprising:

one or more low-bit-rate arteries;

one or more standard-bit-rate arteries;

a multiplexer device in communication with the one or more low-bit-rate arteries and the one or more standard-bit-rate arteries, wherein the multiplexer device is configured to switch packets of compressed data transmitted in basic transmission units among several virtual lines constituted by connections in multiplexed or non-multiplexed mode, wherein data from an originating terminal transmitted on the one or more standard-bit-rate arteries is multiplexed with data from another originating terminal onto the one or more low-bit-rate arteries and is transmitted over the one or more low-bit-rate arteries at an end of an adjustable time lag, the time lag being set when a first packet is inserted in a basic transmission unit; and

a device associated with a terminating terminal, wherein the device is configured to:

> extract the packets from the basic transmission units;
>
> extract the data from the packets;
>
> determine a mode of operation of a connection between the originating terminal and the terminating terminal using signaling data inserted in the packets and indicating the mode of operation, the mode of operation comprising at least one of voice, fax, or a compression algorithm used to compress the data; and
>
> decompress the data in order to recreate data from the originating terminal.

16. (Previously presented) The network according to claim 15, wherein the multiplexer device is incorporated into an ATM switch.

17. (Previously presented) The network according to claim 15, further comprising at least two multiplexer devices, wherein a first multiplexer device is positioned at a first end of a low-bit-rate artery and a second multiplexer device is positioned at a second end of the low-bit-rate artery,

wherein the first multiplexer device is configured to:

extract a plurality of packets from first basic transmission units received from different originating terminals and to multiplex the extracted packets in a second basic transmission unit of a virtual line between the first end and the second end of the low-bit-rate artery for transmission of the second basic transmission unit from the first end to the second end of the low-bit-rate artery; and

wherein the second multiplexer device is configured to:

extract the packets from the second basic transmission unit, determine the terminating terminal to which each of the packets belong, and insert each of the packets into a third basic transmission unit for transmission to the terminating terminal.

18.   (Previously presented) The method according to claim 1, wherein the terminating terminal is configured to determine if a packet has been lost, and if so, the terminating terminal is configured to generate conventional data to replace the lost packet.

19.   (Currently amended) The method according to claim [[1]] 25, wherein the packet of application data further includes a signaling byte indicating the mode of operation comprising at least one of voice, fax, or a compression algorithm.

20.   (Previously presented) The apparatus according to claim 11, wherein the adaptation unit is further configured to determine whether a packet has been lost and to generate conventional data to replace the lost packet.

21.   (Previously presented) The network according to claim 15, wherein the device is further configured to determine whether a packet has been lost and to generate conventional data to replace the lost packet.

22.   (Currently amended) Apparatus for data transmission in a communications network, comprising:

a first adaptation unit associated with an originating terminal, wherein the first adaptation unit is configured to receive, from the originating terminal, data according to a first protocol, convert the received data into coded frames using a compression algorithm, form a packet of application data comprising a plurality of the coded frames according to a second protocol, and insert the packet into a first basic transmission unit at a rate of one packet per unit for transmission to a first end of a low-bit-rate artery;

a first multiplexer device associated with the first end of the low-bit-rate artery, wherein the first multiplexer device is configured to extract the packet from the first basic transmission unit and from first basic transmission units received from different originating terminals, and wherein the first multiplexer device is further configured to multiplex the extracted packets into a second basic transmission unit for transmission to a second end of the low-bit-rate artery at an end of an adjustable time lag, the time lag being set when a first packet is inserted in the second basic transmission unit;

a second multiplexer device associated with the second end of the low-bit-rate artery, wherein the multiplexer device is configured to extract the packets from the second basic transmission unit, determine the terminating terminal to which each of the packets belong, and insert each of the packets into a third basic transmission unit for transmission to the terminating terminal; and

a second adaptation unit associated with the terminating terminal, wherein the second adaptation unit is configured to:

   extract the packets from the third basic transmission unit;

   determine whether any packet in the basic transmission units has been lost;

   determine a mode of operation of a connection between the originating terminal and the terminating terminal using signaling data inserted in the packets and indicating the mode of operation, the mode of operation comprising at least one of voice, fax, or a compression algorithm used to compress the data;

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extract the coded frames from the packets; and

decompress the coded frames to recreate the data from the originating terminal.

23.   (Currently amended) A network configured to convey data between at least two terminals, comprising:

one or more low-bit-rate arteries;

one or more standard-bit-rate arteries;

a first adaptation unit associated with an originating terminal, the first adaptation unit configured to receive data from the originating terminal, convert the received data into coded frames, form a packet of application data comprising a plurality of the coded frames, and insert the packet into a first basic transmission unit for transmission to a first end of a low-bit-rate artery;

a first multiplexer device associated with an upstream switch at the first end of the low-bit-rate artery, wherein the first multiplexer device is configured to extract the packet from the first basic transmission unit and from a first basic transmission unit received from a different originating terminal, and wherein the first multiplexer device is further configured to multiplex the extracted packets into a second basic transmission unit for transmission to a second end of the low-bit-rate artery at an end of an adjustable time lag, the time lag being set when a first packet is inserted in the second basic transmission unit;

a second multiplexer device associated with a downstream switch at the second end of the low-bit-rate artery, the multiplexer device configured to extract the packets from the second basic transmission unit, determine the terminating terminal to which each of the packets belong, and insert each of the packets into a third basic transmission unit for transmission to the terminating terminal; and

a second adaptation unit associated with the terminating terminal, the second adaptation unit configured to:

extract the packets from the third basic transmission unit;

determine a mode of operation of a connection between the originating terminal and the terminating terminal using signaling data inserted in the packets and indicating the mode of operation, the mode of operation comprising at least one of voice, fax, or a compression algorithm used to compress the data;

extract the coded frames from the packets; and

recreate the data from the coded frames.

24.   (Canceled)

25.   (Previously presented) The method of claim 1, wherein the third basic transmission unit enables the terminating terminal to:

extract the packets from the third basic transmission unit;

determine a mode of operation of the connection between first originating terminal and the terminating terminal;

extract the coded frames from the packet of application data; and

decompress the coded frames to recreate the data.

26–29. (Canceled)